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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,152	09/29/2000	Janos Enderlein	450117-02811	9982
20999	7590	03/10/2004		
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			EXAMINER KIM, KEVIN	
			ART UNIT 2634	PAPER NUMBER

DATE MAILED: 03/10/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/676,152

Applicant(s)

ENDERLEIN ET AL.

Examiner

Kevin Y Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Specification

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- I STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96I), "Sequence Listings" (37 CFR 1.821I), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections – 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

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pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 3, 7, 13-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 3 and 13 (and claims 14-16 by dependency) recite "an analog delay means having different delay properties to perform said convolution." However, the specification fails to describe such an analog delay means. It appears that "SAW CONVOLVER" (111) in Fig. 8(b) corresponds to the delay means but there is no description that the SAW convolver comprises of an analog delay means and how, if true, they are used for convolution. For examination purposes, it is interpreted as "a surface acoustic wave chirp filter" in accordance with the specification at page 11, line 19.

Claim 7 calls for a Fourier transformation unit, recited in claim 1, to perform a RF to IF down-conversion and/or an IF to RF up-conversion. However, the specification fails to disclose a Fourier transformation unit performing an RF to IF down-conversion and/or an IF to RF up-conversion. Throughout the disclosure, an IF signal is either input to a Fourier transformation unit or output from a Fourier transformation unit. See Fig. 4a and 4b as representative.

4. Claims 1-17, 19, 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 1, it appears that the alternative language “and/or” is used to define an OFDM telecommunication device for modulation “and/or” for demodulation, making it hard to identify the scope of the claim. It appears that applicant has attempted to define both a transmitter and receiver in one claim and yet without reciting them constituting a system. For examination purposes, the claim is understood as a receiver having an analog RF and IF stage, a digital phase to generate a baseband signal comprising a transformation unit including an analog multiplication step and an analog convolution step for Fourier transformation.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-6,8,17,19-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Huemer et al (IEEE document submitted by applicant)

Consider claim 1. Referring to Fig.2, Huemer et al discloses an OFDM receiver, which (1) includes an “RF and/or IF stage” (not illustrated) as it processes an IF input signal and “a digital stage” in the form of DSP. The receiver also comprises (2) a transformation unit for an analog Fourier transformation, which is known to include a multiplication step and a convolution step as admitted at page 3 of the present specification. See the description of Fig.2 at the paragraph bridging the right and left columns at page 1849.

Regarding claim 2, see the I/Q demodulator in Fig. 2.

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Regarding claims 3, 8 and 17, Fig.2 shows an analog multiplier multiplying an input signal with a chirp signal ($h_c(t)$) and a filter which reads on "an analog means" as interpreted in the paragraph above in connection with the rejection of this claim under 35 U.S.C. 112 1st paragraph.

Regarding claim 4, the receiver of Huemer et al is disclosed as a SAW (surface acoustic wave) based OFDM receiver. Additionally see Fig.1 showing in detail a SAW processor performing a convolution operation.

Regarding claim 5, an OFDM receiver is "a part of a high data rate system."

Regarding claim 6, since Huemer et al teaches that the analog Fourier transformation is carried out as an IF signal is fed into the compressive receiver, the transformation is placed in the lowest IF stage."

Regarding claim 19, Fig. 1 shows a chirp signal as produced as an impulse response of a chirp filter.

Regarding claim 20, Huemer et al also teaches a digital generation of the chirp signal at page 1849, right column, 2nd paragraph by saying that "The chirp signal for the multiplier may also be stored in a digital memory and read out to a D/A converter."

Regarding claim 21, Huemer et al teaches the OFDM receiver is used in accordance with European ETSI/HIPERLAN, which is a physical layer for a BRAN (Broadband Radio Access Networks) system.

Allowable Subject Matter

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7. Claims 9,10,11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 703-305-4082. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kvk


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